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ABSTRACT

The proceedings of this meeting on online service administration comprise the three papers presented: one written by Helen G. Drinan concerning costing and budgeting for online information services; one by Robert McDermand on marketing, publicizing, and other service aspects of online searching; and one by Donna R. Dolan pertaining to the training of online search personnel. Drinan's paper contains a demand history form useful in organizing data for online use predictions, a cost item inventory form, and a graph illustrating how computer surcharges change over various levels of demand. Describing the components of a successful marketing and promotional program for an online search service, McDermand's paper emphasizes the importance of determining user needs, and includes a brief bibliography. In her discussion of personnel training techniques, Dolan advocates the redesign of online search training to stress thought processes rather than system languages. Two sample search exercises are provided. (FM)

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ASPECTS OF INFORMATION SERVICE MANAGEMENT

Proceedings of the Fall Meeting of the
New England On-Line Users Group, Tufts University
November 3, 1978

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Introduction:

The Fall Meeting of the New England On-Line Users Group was held at Tufts University on November 3, 1978. It was sponsored by the Administrative Committee and focused on information service management. These proceedings comprise the three papers presented at the meeting:

- 1) "Costing and Budgeting" by Helen G. Drinan, Manager of the Library, Charles River Associates, Boston, MA
- 2) "Marketing, Publicity, and Other Aspects of Interface with Search Service Users" by Robert McDermand, Coordinator of Public Services, Lamson Library, Plymouth State College, Plymouth, N.H.
- 3) "Training Search Service Personnel" by Donna R. Dolan, Assistant Librarian, Information Retrieval and Reference, State University of New York at Albany.

Public Information Committee
April, 1979

COSTING AND BUDGETING FOR
ON-LINE INFORMATION SERVICES

Helen G. Drinan

The rapid growth of demand for computerized information search systems has presented new budget problems for all library and information centers. While past library budgets have included static costs, the new use of computer services has injected a significant variable cost element into the budget-making process. Static budgets do not easily accommodate the notion of "pay-as-you-go" computer services.

This cost variability is demand-dependent, that is, the cost incurred varies directly with the number of requests for service; therefore, there is a direct relationship between the budget-maker's ability to predict demand for computerized information searches and his ability to predict accurate costs for budgeting purposes. Never in the past has the library budget-maker had to carefully predict the number of users of a book in order to know how much that book would cost; yet, this is exactly the kind of problem presented by the introduction of computerized search services. And, at the current high growth rate of the demand for these services, accurately predicting costs a year in advance will continue to be a difficult task.

Due to the cost variability factor, the provision of a computerized search service exposes the library to the risk of unacceptable budget variances. Because most library budgets are non-negotiable for the period they cover, costs which are not accurately predicted must either be accommodated, indicating the

cessation of the search service at the time the predicted cost is exceeded, or supplemented, meaning a trade-off for other budgeted resources. To minimize the risk of budget problems triggered by the introduction of a search service, I would like to describe a search service budget process which includes cost estimates and controls.

As we know, a budget serves as a program planning tool; once we determine what service we intend to offer, we request resources to provide that service. To budget for a search service, we need to look at the costs of all resources we require. There are basically three kinds necessary to offer search services: direct labor, including all staff time spent in the actual provision of a search (reference interview, search strategy development, on-line search, and follow-up with the end user); direct expenses, including computer time, telecommunications charges, and costs of print-outs; and indirect costs, which are all those resources which must be available to provide a search service not included in direct labor and expenses. In this category, for example, are the "unseen costs", such as terminal lease/purchase fees, administrative labor, and systems documentation.

In general, direct labor and direct expenses are the variable costs, while indirect expenses are fixed. Let's look at the distinction, because it is important to understand this in order to properly budget for the search service.

Direct labor is the first variable cost item to consider. In most libraries, trained searchers combine their searching duties with other activities; therefore, the portion of their labor time which is dedicated to searching is subject to change-- it depends upon the demand for searches. Only in the situation that a searcher is dedicated to that activity and would indeed sit idle if there were no searching activity would the cost of this labor be considered fixed. Moving from direct labor to direct expenses, the cost variability is self-evident: there is a cost for computer time, telecommunications, and print-outs only when there is a demand for searches. Conversely, with fixed expenditures, there is no variability in cost once we have initially determined to provide the service. A good illustration of this is training expenses; regardless of whether a searcher satisfies one or one hundred requests, there is some amount of training required just to initiate the service, but training cost is not increased with each additional search request, so these expenses do not vary with demand. One point of clarification is in order: fixed expenses are not necessarily fixed forever; they are merely fixed over a relevant range of demand. For example, we fix the training cost at an amount sufficient to enable a searcher to satisfy demand if service is limited to five data bases; however, if we increase service to cover ten data bases, we can assume that demand will reach a new

relevant range and that the training cost will have to be increased accordingly. All fixed costs must be specified for a certain relevant range of demand, and must be properly adjusted when the range parameters change. While the fixed costs do not vary directly with demand as do direct costs, there is a functional relationship between fixed costs and demand which must be considered to budget accurately.

Now that we know something about the nature of the three kinds of costs for which we are budgeting, two important tasks remain: project demand for services, and itemize all costs.

To arrive at a demand forecast, we want to analyze trends in historical demand data, impute a reasonable growth factor, and use any information available to us which could indicate conditions that could alter past experience. Exhibit I, a Demand History, adjustable for any library, organizes all historical data so that we have a basis upon which to make predictions. The same form can be used as a demand projection worksheet for the budget planning. Obviously, the more of these historical data forms we have the data to complete, the easier we will find it to observe trends. We need to see if there is a consistent increase from year to year; for the most recent year, we must look carefully at each of the twelve months' activity to see if the total volume for the year is actually distributed in a consistent pattern, or if new trends occur during the latter part of the year. By comparing these year to year levels of demand, we can develop the growth factor we need to predict the next year's

demand, while careful scrutiny of the recent year's demand will help us to refine our prediction. Finally, when this process is complete, we need to look critically at the demand we forecast in the light of all that we know about our own search operation to decide whether it is an estimate we can work with comfortably. This is the point at which it is wise to build in a margin of safety against unanticipated expenses, such as unannounced rate hikes. It is here that first-hand experience with a particular group of users' needs will be of greatest assistance.

While it is possible to do some sophisticated regression analysis to predict demand, most libraries find this impractical, and given the scanty historical data coupled with the dynamic growth rate, the results of any sophisticated analysis may be in doubt. Unfortunately for the budget-maker, there is no simple way: the demand-forecast--as critical as it is--is very difficult to calculate, and requires careful, insightful analysis.

In our own experience, we looked at demand over a three-year span, with careful attention to the most current year. While demand had doubled from the first to second year, it quadrupled from the second to the third. Following this trend, we could expect an eight-fold increase for our fourth year's demand; however, we knew that this was simplistic and certainly seemed a risky trend upon which to make a budget recommendation. We therefore decided that while historical data were useful for total volume use figures, they were not necessarily reliable growth rate indicators because the time span was too short to observe a reliable trend.

Indeed, we had evidence that demand had been stable over the last four months of the third fiscal year, indicating that while the total for the year showed a quadrupled demand from the first year, we could anticipate the stabilization to continue into the fourth fiscal year, producing a much diminished demand growth rate. For budgeting purposes, we projected a lower demand growth rate for the new fiscal year and estimated costs accordingly.

With the demand forecast established, we can now itemize all costs. This is a straightforward process, but it does require an in-depth inventory. Exhibit II is an inventory form which can be modified to suit the needs of any library. It is divided into three parts, and reflects the three basic kinds of cost we have discussed. As the inventory shows, we will need to use demand estimates directly to calculate both direct labor and direct expense items; the fixed expenses assume a specified relevant range of demand, but the calculations do not require demand estimates. In general, indirect expense estimates are based on more available data than direct expense estimates.

The budget which results from the demand forecast and the cost inventory reflects our best attempt to create a search program plan. Remember, though, that our initial concern was to minimize the risk of negative budget variance, and the resulting consequences of service curtailment or loss of other

resources. To minimize the risk of budget variance, we must implement controls which will alert us to potential problems in time to take corrective action. The obvious question is what controls will work?

We are all probably aware of a number of budget reporting systems--some provided by vendors who specialize in cost controls, others created in-house by accounting departments. Regardless of the specific system used, all reporting systems simply describe cost performance. It is then up to the manager to act when necessary to keep costs in line with expectations. For the search-service budget-maker, action will be required on a regular basis if there is any disparity between predicted and realized costs. As we have already noted the variable demand and cost element of a search service budget, we can reasonably expect that disparities may be frequent; ironically, the more popular our service is with users, the more problems we face in budget control.

In the long-run, we can expect to improve each year in our ability to predict search demand and resulting costs, and to establish a reasonable safety margin so that disruptions in service and loss of other resources are avoided. There is another way of approaching cost control, however, which I would like to talk about now, and that is user charges. While I recognize that user charges are common only in some special

libraries, and that there are traditional philosophical problems with charges in libraries, the present and anticipated library funding problems indicate that at the very least an understanding of this cost control method is important for every library budget-maker.

A user charge is a device used to control demand for service (and therefore expenditure of funds); it works because in general a rational user will limit the expenditure of his own funds to searches he really needs. There are clearly sound economic reasons to implement user charges: if searches are a free good, the demand may not be rationally controlled, leading to the difficulty in predicting and managing costs we have already noted.

As search analysts know, there is a significant tendency to opt for a computer search over a manual search even in cases when that is not the optimal information resource due to the speed and ease of computer searching. If computer searching is also free, this tendency will only increase. Therefore, some incentive to assist the user in rationally choosing his best information alternative, given his time and money constraints, assists in the smooth management of an information center.

In libraries which do charge users, the fees generally are applied to the direct expenses (searcher labor, computer time, telecommunications, and print-out charges.) In some cases, all

these costs are passed on to the user, while in others, the library subsidizes a maximum amount per search, and passes on only charges in excess of the maximum to the user.

Occasionally a library will allocate its indirect expenses of searching as well as its direct expenses. This is a far less frequent method of allocating costs because a fair and workable method of spreading the costs is not readily apparent. However, if we have already completed the budget process suggested earlier, (that is, estimated demand and inventoried costs) we have actually done the work for an indirect expense allocation method which is both workable and fair. It relies upon a constant rate of surcharge applied to search service vendor invoices. This is how it works: we compare the total of all indirect expenses to the total estimated dollar demand for computer search time, and find the percentage which expresses this relationship. This percentage tells us how much we must spend per dollar of computer time to provide all the indirect items we have identified as necessary to support a search service. For example, if the percentage is 50, that means that it costs us an additional \$.50 on every dollar of computer time to support our indirect expenses. If we want to allocate a portion of the indirect expenses to each search, we simply surcharge the direct computer time cost by this percentage. It is critical to note that the surcharge is applied only to

computer time invoices, and not to searcher labor, printouts, or telecommunications charges. As a result, in order to allocate all of the cost of a search to a user, we should bill him for: the searcher's labor, any print-outs generated off-line, all telecommunications charges, all computer time charges, and a surcharge on the computer time charge to cover indirect expenses.

To demonstrate how the surcharge changes over various levels of demand, I have attached a graph in Exhibit III. Note that at point A, we have a low level of demand, and a very high surcharge rate. This certainly makes sense when we remember our earlier discussion about the nature of fixed costs. Indeed, we must invest a large sum at the start-up of a search service just to provide the service, and it is only as demand increases that the cost of indirect expenses begins to drop proportionally to demand. At this early stage, it is impractical and self-defeating to even consider surcharging users. The surcharge would probably exceed the direct expense of providing a search, and the allocation rate would be so high that it might discourage first-time users from ever requesting a search again. For the most part, at service start-up, surcharges for indirect expenses have a negative impact, and should be avoided.

As demand increases, however, the surcharge becomes a fair assessment of indirect costs, and begins to function as the positive control mechanism we discussed earlier. Indeed as the rate

approaches point B, the optimal surcharge rate is found. This is the rate at which the volume of demand fully utilizes the capacity of the indirect expense investment. For example, if the rate at point B is 30%, this means that for every dollar of computer time, we incur an indirect expense of \$.30, and that this rate is about as low as we can go to support this level of demand; indeed, to support any more demand will require additional investment in indirect expenses. As demand approaches point C, the surcharge rate does decline very slightly, but it makes sense that we will not realize a surcharge of 0 because no matter how high the level of demand, there will always be some indirect expenses, even if allocated at increasingly lower rates.

How do user charges alter the budget-maker's task we described earlier? The more user charges are employed, the less the budget-maker must depend on his demand projections and the derived cost estimates, so some of the variability is removed. However, the use of a surcharge for indirect costs is definitely a complication because it must be calculated carefully in order to find the appropriate rate which neither overcharges nor undercharges users. This may be particularly critical in organizations holding U.S. government contracts, due to accounting requirements set forth for government contractors. In addition, the volume of demand for searches and the actual indirect expenses must be sufficiently high to justify the additional bookkeeping necessitated by the

use of a surcharge. In the end, user charges should be implemented only when the benefits outweigh the costs; this decision must be made by the manager able to look at all elements of concern.

Currently at Charles River Associates, we are charging back all elements of search service costs, implementing an indirect expenses surcharge for the first time this year. We have experienced such a high rate of growth of demand for search services that we are trying to observe how demand responds when the full cost of searching is borne by users. We have removed the effective subsidy produced by covering the indirect expense cost. It will be interesting to consider our actual experience one year from now.

I hope that this discussion of budgeting and costing for search services assists professionals in the field. Please direct any questions or comments to me and I will be happy to pursue any issues which result.

EXHIBIT I

Demand History/Projection

From Historical Records ____ or Projected by Fiscal Year ____

FY ____ Total All Vendor Expenditures ____

BREAKDOWNS BY VENDOR AND DATABASE, MONTHLY

		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
BRS TOTAL	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
DATABASE SUBTOTALS													
NTIS													
Other	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
DIALOG TOTAL													
DATABASE SUBTOTALS													
Predicasts	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
SDC TOTAL													
DATABASE SUBTOTALS													
CIS	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
Other	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

EXHIBIT 1 (cont.)

BREAKDOWNS BY VENDOR AND DATABASE, MONTHLY

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
--	-----	-----	-----	-----	-----	------	------	-----	------	-----	-----	-----

NYT TOTAL

TRIS TOTAL

EXHIBIT II
Cost Item Inventory

I. Direct Labor	<u>Amount</u>	<u>Notes</u>
A. Hourly rate of each searcher, times estimated hours of search time per searcher, aggregated	_____	
Total for Direct Labor	_____	
II. Direct Expenses		
A. Computer time: estimated hours per data base, times hourly cost per data base, aggregated	_____	
B. Telecommunications: total hours estimated connect time, times cost per hour	_____	
C. Printouts: total estimated number of cites per data base, times cite charge per data base, aggregated	_____	
Total for Direct Expenses	_____	
III. Indirect Expenses		
A. Training Expense		
Beginning: BRS	_____	
Lockheed	_____	
SDC	_____	
NYT	_____	
TRIS	_____	
_____	_____	
_____	_____	

	<u>Amount</u>	<u>Notes</u>
Advanced: BRS	_____	
Lockheed	_____	
SDC	_____	
NYT	_____	
TRIS	_____	
_____	_____	
_____	_____	
Data Base: _____	_____	
_____	_____	
_____	_____	
_____	_____	
Travel Expense:		
Onsite Trainers	_____	
Staff Travel	_____	
Staff Hotel/Food	_____	
Staff Other	_____	
Terminal Practice Time:		
BRS	_____	
Lockheed	_____	
SDC	_____	
NYT	_____	
TRIS	_____	
Subtotal for Training	_____	
B. Memberships/Meetings		
Organization: NENON		
Other Professional Meetings:	_____	
attach detail (including users conferences)		
Subtotal for Memberships	_____	

	<u>Amount</u>	<u>Notes</u>
C. Automated Reference Library		
Manuals: attach detail	_____	
Journals: On Line Review	_____	
On Line	_____	
Books: attach detail	_____	
Required Purchase: attach detail	_____	
Subtotal for Library	_____	
D. Equipment/Supplies		
Modem: Vadic high speed, depreciation/lease	_____	
Terminal: Decwriter, depreciation/lease	_____	
Telephone: data phone, rental (hourly charge x 12 months)	_____	
Paper: Decwriter (number of boxes x charge/box)	_____	
Required subscription hours, less used	_____	
Maintenance fees	_____	
Promotional materials	_____	
Stationery	_____	
Subtotal for Equipment	_____	
E. Labor Cost		
Administrative:		
Billing time (number of hours/year, times hourly rate of appropriate staff member)	_____	
Manual Maintenance and Acquisition (number of hours/year, times hourly rate of appropriate staff member)	_____	
Coordination (logs, records, manage- ment) (number of hours/year, times hourly rate of appropriate staff member)	_____	

	<u>Amount</u>	<u>Notes</u>
User Education/Interface (number of hours/year, times hourly rate of appropriate staff member)	_____	
Training:		
Staff hours (number of hours per staff member, times hourly rate, aggregated)	_____	
Meetings:		
Staff hours (number of hours per staff member, times hourly rate, aggregated)	_____	
Subtotal for Indirect Labor	_____	
Total for All Indirects	_____	

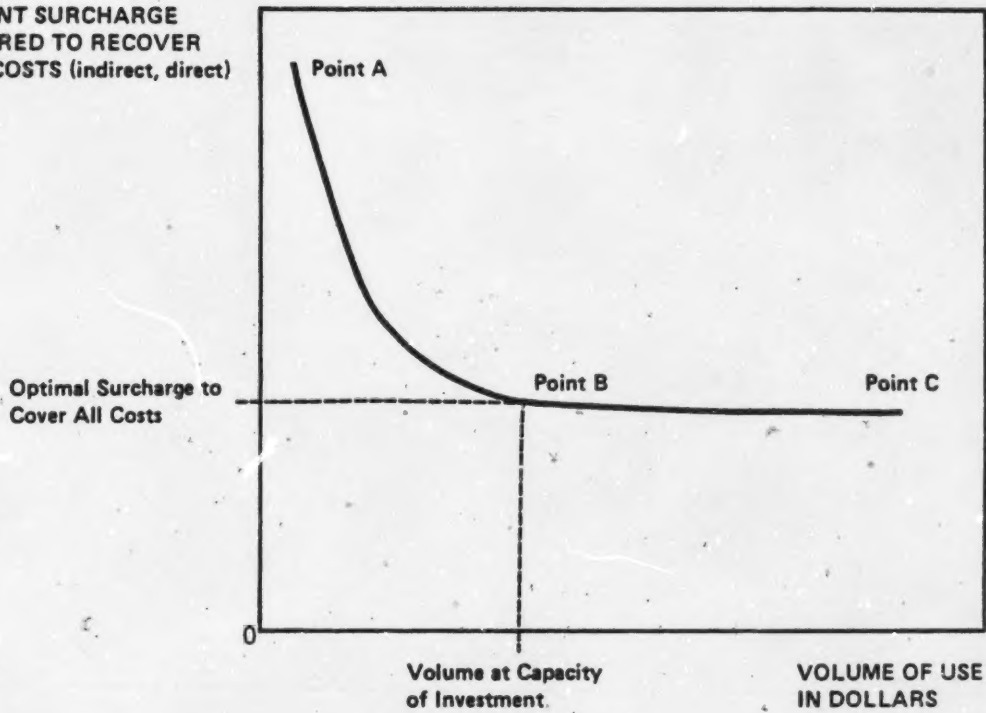
Summary of all Expenses

Totals: I. Direct Labor	_____
II. Direct Expenses	_____
III. Indirect Expenses	_____
GRAND TOTAL	_____

EXHIBIT III

SURCHARGE AS A FUNCTION OF DOLLAR VOLUME

PERCENT SURCHARGE
REQUIRED TO RECOVER
FULL COSTS (indirect, direct)



Graph courtesy of Peter Butler, Controller, Charles
River Associates.

MARKETING, PUBLICITY AND OTHER PUBLIC SERVICE
ASPECTS OF ON-LINE SEARCHING

Robert McDermand

Despite the fact that most of us here today are quite conversant and even comfortable with most aspects of on-line searching, it is important to recognize that to most of our patrons on-line searching is a new experience. Few of us have been involved in searching for more than five years and most for even less. Searchers, whether a single individual at a small academic or special library, or a staff of information specialists in a large library, all face a similar problem of user education. On-line searching is a relatively costly enterprise and its success depends upon attracting and satisfying users. This is just as true at institutions beginning to offer search services as it is at institutions where on-line services are well established. Promotional or marketing activities must be a continuing effort.

Currently most promotional schemes are pragmatic efforts based primarily on methods that have been effective in advertising other, perhaps more traditional library services. Needless to say, the service being advertised must be ready to meet the customer demands that will be placed upon it. Throughout the literature on marketing on-line searching, warnings about the hazards of creating a customer demand that the search service cannot meet are repeated. The danger of creating a core of dissatisfied users is to be avoided at all costs. A corollary of this warning is the raised expectations of successful search recipients who may now expect that other library services will work as well and rapidly as has the on-line search.

It is, therefore, important to direct some of your initial and continuing marketing effort at other librarians and staff members so that they can be aware of on-line service and understand its im-

plications for their areas of responsibility. Often at first glance, on-line searching seems to be a routine extension of the library's traditional mode of operation, similar to the acquisition of books, periodicals, audiovisual materials, and so forth. This appearance is deceptive, because an on-line search is a custom tailored service. Each search is unique to a single patron. Maybe a more accurate analogy would be the library's commissioning a monograph written to the specifications of a single patron and of interest to no other.¹ This is not to say that it is not a legitimate library activity, only that it must be recognized for what it is and the demands placed on inter-library loans and acquisitions must be acknowledged and the expense of accommodating increased demands for service needs to be anticipated.

Those are some of the most basic items to be considered as you plan to market your on-line search service. Marketing cannot overcome an underfunded or understaffed search service, nor can promotional efforts disguise a poorly trained staff. Promotional efforts represent an organized way of offering on-line services that includes user interests, databases, communications methods, imaginative design of services and products and feedback that improves what you are doing.²

Your promotions or marketing activities are a way of educating library users. To make them effective you must develop a profile of the individuals you are attempting to reach. Most marketing texts

¹ Roger Christian, The Electronic Library (White Plains, N.Y.: Knowledge Industry Publications, Inc.) p.64

² Douglas Ferguson "Marketing On-Line Services in the University" On-Line, July, 1977, p. 15

break this approach down to a series of questions that you must answer to begin your marketing approach. Those questions, modified to fit the development of a marketing approach for a search service might look like this: 1) Who is my audience? 2) What are they interested in? 3) What can be created to serve their interests? 4) Under what conditions must the library services or products be offered? 5) How can the natural audiences be communicated with and how can their needs be communicated to the searchers?³

A successful marketing effort requires a good deal of planning and I have found that a good way to begin answering the five questions is to begin thinking about the advantages of on-line searching. You may be able to think of others that apply to your particular situation, some I have thought of are: 1) The time saved by computer searching. 2) A single search can cover all the years in a data base. 3) There is no need to handle books. 4) The data can be manipulated in complex logical combinations that are otherwise physically impossible. 5) Access or index points to each item are increased. 6) The printout eliminates the need to take notes. 7) Individuals who are recipients of a successful search may become more effective library users and will, in some cases, begin to regard the library, librarians and allied services as immediate and important to their information needs. 8) Time saved in searching can be translated directly into money saved. 9) Searchers can be relatively certain that nothing has been overlooked in the search, and 10) The costs of searching are dropping while the number of accessible data bases is

³Ibid., p. 15

increasing.

With these ten benefits in mind, we can begin thinking about the needs of the users. None of us is going to be dealing with a homogenous clientele. All of our users are composed of smaller groups that have certain characteristics and interests in common. This division of users into natural groups is called market segmentation. I suspect that the concept of market segmentation has a lot to do with why television commercials for smokeless tobacco appear only during the world series games or during professional football games. In any case, the common characteristics that each identifiable group has can be translated into ways of reaching that group and into benefits that your on-line search can provide. When you consider it for a moment you will realize that traditionally libraries have always separated their users into groups. Academic librarians by departments or divisions or by faculty, graduate or undergraduate status, or in special libraries by administrators, researchers, writers, salespeople and so on. Douglas Ferguson writing in On-Line suggests that a useful basis for segmenting the marketplace is by purposes of gathering information and he cites a study by Harry Back that appeared in the 1972 Journal for the American Society for Information Science. That study developed statements of need which are benefits to the information seeker. Almost all of the needs can be met by an on-line search. The needs were: 1) Acquiring ideas for new work. 2) Supporting work in progress. 3) Gaining theoretical information. 4) Developing alternative approaches for problems. 5) Locating results of related work performed by others. 6) Finding answers to specific problems. 7) Evaluating a result or

approach. 8) Keeping current. 9) Being aware of developments in one's field. 10) Being aware of workers in specific areas or problems. 11) Being aware of developments in related fields. 12) Developing competence. 13) Brushing up on an old specialty. 14) Learning a new specialty. 15) Preparing educational material. Coupling these needs with the advantages of on-line searching suggests several specific approaches that you might want to employ to reach various segments of your market. Marketing specialists call this product design and once again marketing texts all focus upon the vital importance of designing products for the requirements of separate groups. Unfortunately, most of the literature about marketing and promoting on-line services seems to deal with promotional materials and not designing specific services to meet specific needs. This is also an area where background in a small academic library has limited my experience. I have not really felt the need to design different kinds of search packages since most of the search problems with which I am dealing come from a small and relatively homogenous population. I have found, however, that by doing searches for a variety of individuals, I have really designed products that are marketable. That is, for the few researchers on the faculty, current awareness searches have been designed and stored. Reviews of the literature have been undertaken for faculty and graduate students and problem research is being done for undergraduate students. With a little imagination all of these types of searches could be marketed to those groups as specific services available. I am certain that there are many other individuals, even in my small population group

who would respond to this kind of approach.

In larger libraries and in special libraries searches could be marketed in many other ways to meet the needs of various groups. People writing grant proposals, doctoral candidates, patent researchers, legislators, counselors, and so on could all be contacted with promotional materials keyed specifically to needs that on-line searching might meet.

In designing materials for promotion of on-line services, it is important to keep the needs of users in mind rather than beginning with descriptions of what you happen to have. As Theodore Levitt observes in The Marketing Mode, "last year one million quarter-inch drills were sold, not because people wanted quarter-inch drills, but because they wanted quarter-inch holes".⁴ So advertise holes, not drills. That is, advertise what your on-line service can do, not what it is. The focus of your message should be what the patron may get out of the on-line services. Many examples of successful promotional marketing materials begin with a question to the potential user that starts that user thinking about the needs he has that might be satisfied by the service offered.

When user groups have been identified and when materials have been designed, location and distribution of the materials needs to be considered. Again, these locations will vary with each situation, but all of us will have certain point of need locations in the library. By placing signs at the printed indexes users can be alerted to the fact that "This index can be searched by computer".

⁴Ibid., p. 19

I'm sure you are all aware of the stickers that vendors are producing with this message. Posters at circulation and reference desks and on departmental, classroom or lounge bulletin boards are obvious choices. In developing and posting these types of materials it is important to remember that people respond best to publicity that is individualized and personally relevant.⁵

Posting, mailing and handouts are all passive marketing attempts. Usually they are carried out without a personal contact with the search service. It makes sense, in light of the fact that most of us will be working with limited or non-existent budgets, to target your interest groups specifically and maybe limit your approaches to one or two groups a quarter, semester or year. That way you are not as likely to be overwhelmed by the response and you should be certain that you will be able to deliver the services as advertised.

Depending upon your situation and your analysis of user groups and their needs a less passive and more personalized approach to promoting on-line services might be effective. Telephone calls, personalized letters, free or reduced cost searches for "opinion leaders" in the community are other less passive methods of promoting on-line services. These methods are generally a little more costly in terms of staff time. Based upon your appraisal of the situation they may prove more successful than a strictly passive approach.

⁵NASIC Year Two Report, March, 1974-February, 1975. (Wellesley, Mass: New England Board of Higher Education) p. 7-13

Equally important as you embark on a marketing effort is a time schedule so that your efforts do not disappear after a brief initial flurry of promotion. Plan your demonstrations, mailing or postings so that you can see what the results are and thus modify to improve performance or continue a successful promotion.

Finally, the free demonstration of search capabilities for a small group of influential and interested potential users of the service is a tried and true marketing technique. Most of us were probably introduced through such a demonstration at a training session somewhere. The literature is filled with descriptions of the success of such demonstrations along with suitable warnings about the need to rehearse and to be certain that everything goes as planned.

Promotional efforts, like the ones just mentioned, need to be sustained in academic and special libraries. This should be obvious as the user populations are turning over at relatively regular intervals. As department chairpersons come and go, graduate and undergraduate populations change, new or at least repeats of successful market strategies need to be continued.

Finally, in all the readings, the importance of word-of-mouth publicity is emphasized. Simply put, the effect of all promotional efforts are useless if the user is not satisfied. If the services performed are perceived as being successful and helpful, they will be talked up and demand for the service will grow. If the users are disappointed with the results achieved, or if they feel the results are not cost effective they will stop using the service and will communicate their displeasure to others and on-line

searching in that situation may be doomed.

This really comes down to having well trained searchers who can produce useful results the value of which clearly exceeds their cost. In my opinion this last point is the most important in any marketing strategy. The librarian who is doing the searching is the intermediary between the user and the service. This individual must accept, as part of the job responsibility, the need to promote the use and benefits of the on-line service. Searchers must be personable, enthusiastic, assertively helpful, and communicative as well as competent. They have to be market oriented and the market is the user they are serving.

User feedback should be collected, and part of that evaluation process should be a question asking the user how information about on-line searching was encountered. This information will be useful in designing and locating future promotional materials.

The management of marketing strategy, its planning and execution will undoubtedly be a function of the size of the organization. In most situations that I am familiar with this has been done by the searchers themselves with help in graphics and design picked up wherever possible. Most libraries offering on-line services do so because they are already motivated by user needs. The on-line searchers have their own selfish interests at heart when they promote their services. On-line searching is intellectually attractive and often prints out a successful conclusion to a search attempt. Searchers promote the service so that they can continue to do searches. Searchers are almost universally enthusiastic about searching and do not hesitate to promote it. Thus marketing

becomes a natural extension of their efforts. That said, I'm sure I do not have to warn you about the amount of time that is involved in preparing and presenting promotional aids. I have no solution to the time problem except to warn you that all of these promotional activities seem always to take at least twice as much time as originally planned.

Another part of marketing is pricing. Search fees seem to be nearly universal and can be part of a marketing scheme. The fees charged will, for some users, be the determinant for use. But most research seems to bear out the premise that fees are not the primary consideration for most users.⁶ Briefly, there are at least four ways to price searches: 1) Charging a nuisance fee of five to fifteen dollars to discourage users whose intent might not be serious. 2) Some kind of partial pricing covering off-line prints or connect time charges. 3) Full cost recovery sometimes including a surcharge for overhead. 4) Some kind of sliding scale of charges based upon the users status, or possibly based upon the depth of the search; or an introductory search at a cheaper price until the user is hooked. All of these pricing schemes can be incorporated into marketing and promotional aids. I don't feel that on-line searching is in danger of pricing itself out of the marketplace, but cost is a concern to the users. This concern needs to be considered, and the cost effectiveness of searching should be stressed in promotional materials.

The components of a successful marketing and promotional program for an on-line search service, then consist of: Describ-

⁶Ferguson, p.22

ing the advantages of searching to a selected potential user population whose information needs are known. Designing products to meet those needs based upon the advantages that on-line searching can offer. Then engaging in both passive and active methods of contacting the user group so they can be informed about the potential benefits of on-line searching.

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TRAINING SEARCH SERVICE PERSONNEL
BY Donna R. Dolan

It is not only searchers who need training, but administrators and support staff as well, and each group requires a separate training track.

The most difficult group to train is the administrators (that is, non-searching administrators) because they are superiors caught between their expert searchers and database vendors. Some frustrating attitudes that I've heard from the top are:

Anyone who can read can run a computer search.

Anyone who can type (preferably 70 wpm) can run a computer search.

Anyone can run a computer search.

One administrator, although not doing online searching himself, insists on attending training sessions instead of sending the searchers. Of course, new developments are not communicated to searchers in the depth that they should be. How can non-searching administrators evaluate their staff? And how can we enlighten them to the need for our own training?

One direct approach is to route testimonials from satisfied users to your administrator. You can initiate a brief user survey and compile the results into an impressive report or do demonstration searches for key people in your organization. The latter is especially effective if you know what their information needs are and meet them without asking or being asked. The indirect approach is to talk to your administrator's colleagues and hope that the word gets back. Hopefully, with satisfied users, the administrators will be more willing to fund continuing education for searchers. What we really need is an Online Training Institute for managers.

Your support staff will be more effective and efficient if you train them. Besides policies and procedures, support staff needs to be versed in online jargon so that they can communicate with you and with database vendors.

Depending upon the staff, you may want to expose them to Boolean logic and coverage of the various databases. An aid we use for our support staff is the "Database Subject Index" by Teitlebaum and Hawkins (Online April 1978) in which they can look up a broad subject to see if we have a database which covers it. That way, support staff can screen requests to determine if we do have an appropriate database and refer the request to the appropriate subject specialist.

The most difficult problem in training searchers is who to train. Most of those present at the 1977 ASIS Mid-Year Conference on Online Training agreed that a good searcher can be recognized intuitively. Judith Wanger speaks of "IT, a special skill which is not quite definable, but somehow characterizes the expert searcher" (Online, 1977).

But how to train the right person? And how to tell your administrator that the hand-picked candidate with an M.S. in Chemistry and fluent in 5 languages is precisely the wrong person?

Wanger's study of the Impact of Online Retrieval Services reports that managers picked searchers because of computer, library or subject expertise. A very few managers selected a searcher because of a logical, thorough, analytical mind or the right personality. But these subjective factors may well be the most important in selecting searchers.

If you've ever had the costly and unfortunate experience of training the wrong person, you may have wished for some screening device for searchers. I have identified some criteria as prerequisites in the searchers I have trained. These are:

- 1) FLEXIBILITY OF THINKING - ability to look at a request or a problem in more than one way

- 2) SELF-CONFIDENCE - to decide on the best of the possible approaches and stick with it
- 3) CONCEPT ANALYSIS - breaking a search down into its components
- 4) ABILITY TO THINK IN SYNONYMS OR A LOVE OF WORDS (English majors are not out of the running as search analysts)
- 5) ANTICIPATION OF VARIANT WORD FORMS & SPELLINGS
- 6) SPELLING SKILLS

At the New York State Library, I developed a test for these skills which we used successfully to cultivate or weed out search analysts. If a candidate did not perform well on this diagnostic test, we did not invest time or money in further training. My premise was that underlying a good search analyst is a certain mind set or cognitive style and that no amount of training can develop this method of thinking. This may be related to the fad of the year-- cerebral dominance. The right half of the brain is the verbal and relational side, and the left half is the logical side. I haven't determined which half is dominant in a good searcher; the solution may be an ambidextrous searcher.

Those in the business of training search analysts distinguish between training and education. Training consists of mechanics and system languages-- the what and when of searching. Education is the how and why of searching-- the subtleties of how the system works and database quirks.

I think that training and education are not separate, but progressive steps. Anyone can be a trained search analyst, but not an educated one. There seem to be stages of training & education and ideally the searcher should advance to the highest stage. These stages are:

-- THE MECHANICAL STAGE

Sally Knapp calls this the "gee whiz" stage (Online April 1978). This is a tunnel vision view of searching when the

searcher is overwhelmed by the new technology and equates mastery of commands with mastery of searching. A serious problem is the searcher in this stage who thinks that he knows it all.

-- THE ANALYTIC STAGE

This is a logic stage when the searcher begins to recognize similar types of problems. The searcher focuses on problems, not mechanics. This is an experimental stage when the user tries shortcuts and original approaches. Trainees can learn most from trainees when they are in this stage.

--THE INTEGRATION STAGE

This is the highest but humblest stage when the searcher realizes that there are many approaches (and no one right approach) to a search. In this stage, the searcher translates between many systems, vocabularies and databases simultaneously.

Only a few searchers reach this third level. Although some trainees may catch on immediately to the rudiments of searching, they never show any progress. Some early warning signs of this stagnation are:

- the searcher cannot understand the difference between free text and controlled vocabulary searching. (See exercise in Fig. 1)
- the searcher cannot understand a broad vs. a narrow approach to a search request.
- the searcher cannot understand paragraph qualification.

HOW TO TRAIN

Martha Williams detailed the components of training and education at ASIS Mid-Year in 1977. I am concerned with approaches to training:

Total Immersion

Expose the trainees to online searching immediately. Let them observe the process, the tools, and the results. Then, when they read system manuals, it all makes more sense. Elaine Caruso, developer of TRAINER at the University of Pittsburgh, also recommends this method.

Mechanics First

The "mechanics first" approach presumes that the trainee possesses the cognitive skills evaluated in the diagnostic test. Sally Knapp devised exercises to familiarize the trainee with keyboard mechanics and equipment.

I once worked at a bank with an online system. For their training program, tellers practiced on a blowup photograph of the terminal. Although the tellers mastered the dummy terminal, the real terminal felt and acted quite differently. They could not transfer their experience from the training aid to the real terminal. The moral, of course, is to learn in a real life situation. Learning mechanics first frees up the trainee to concentrate on education.

One of the main advantages of Computer-Assisted Instruction such as MEDLEARN is that it gives you self-confidence in interacting with the system.

Mentor Method

At SUNY Albany, all searchers take a basic course in information retrieval and the ERIC database. They then do a 6 month internship at the

terminal with an experienced searcher. This provides in-depth training but does not interfere with the searcher's normal workload. For most of the 6 months, the trainee interviews users and formulates searches alongside the experienced searcher. The two compare approaches so that the trainee focuses on vocabulary and multiple approaches to the same problem. There is no substitute for this real life situation with irate patrons, down time, and inappropriate searches. I believe in this setting for training because a search analyst must perform under pressure, but the experienced searcher is at hand for moral support. Searchers not trained in this way tend to be very dependent and panicky when a problem arises.

Other Training Hints:

Invest in in-house training before sending trainees cross-country for costly vendor or producer training.

Do use small files (such as BRS 'X' files) for training.

Use representative files. ERIC or MEDLARS have a variety of searchable paragraphs such as codes, descriptors (2 levels), abstracts, and identifiers.

Take a "singular" approach to training:

- one system
- one database
- one trainee at a time.

I'm a strong believer in individualized instruction - in having a basic curriculum but in tailoring exercises to meet the individual's problem area. some of these include:

- 1) translating Venn diagrams into logical search statements. Although the opposite is usually a part of a training package, this approach is not.

- 2) using the system's storage capability to store a model search against which the new searcher can check his strategy. The stored search includes broad or narrow approaches and errors in logic. A separate key explains each combination. This is similar to ONTAP, Lockheed's training file, except that it includes mistakes because sometimes searchers have to see WHY NOT before they can understand WHY?

WHERE TO GET TRAINING

The ideal situation in which to learn searching is in the large organization- particularly one with a computer search unit. That way the trainee learns all phases of a service-public relations, management, and subject specialization.

But where can the sole searcher in an organization get training? The Washington, D.C. Online group has set up an internship program for precisely this purpose. SUNY Albany has had many area librarians observe & sit with us. A local online group is an effective means of training. The Online Circuit- recommended sites for training- will help balance the geographic distribution of training.

Unlike the first online searchers who were informally or self-taught, most searchers today have formal training. Formal training sessions usually correspond with national conferences. Look for sessions co-sponsored by a database producer and the vendor who loads the database for in-depth training. Look for advanced training which is scarce but often sponsored by online groups. I recommend the advanced MEDLARS training sponsored by BRS and the National Library of Medicine. Look for training sponsored by government agencies, professional organizations and online groups because training by companies only in the database business tends to be too market,

instead of education, oriented.

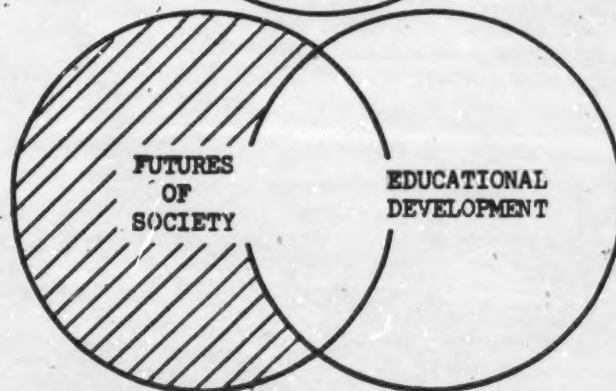
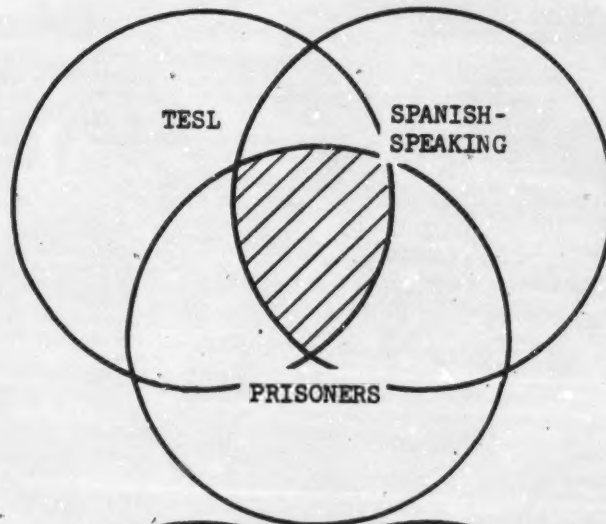
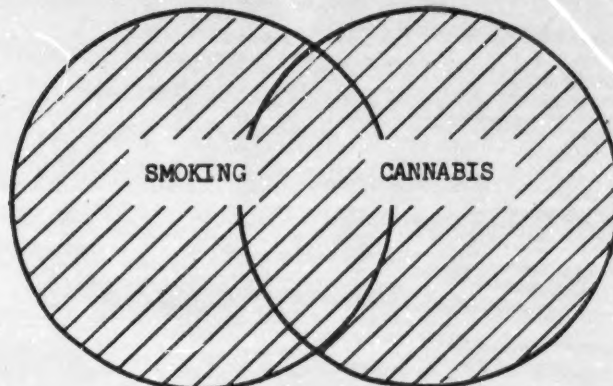
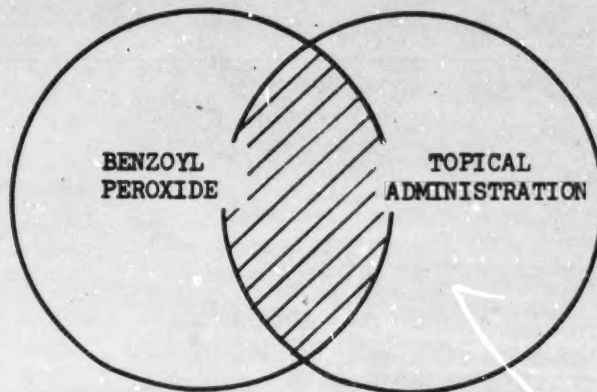
Unfortunately, the profession does not take enough responsibility for training. Although there are abundant introductions to online searching, there are few ongoing educational programs for experienced searchers.

Finally, not anyone can train, anymore than anyone can search. Along with Peter Watson, I strongly uphold the need for certification of search analysts. This has precedents in the certification of medical, law, and school librarians. Online searching is a specialty and should be recognized as such. A certificate could be awarded for certain standards, and recertification for continuing education. This is the only way to insure high quality searchers and trainers. ASIS might undertake this task.

SUMMARY

Despite the variety of online training available, personnel are never fully trained. Training is an ongoing process; and six months under an experienced searcher or attendance at advanced training sessions do not a searcher make. The best search analysts are consistently creative in analyzing search requests. So perhaps training should be redesigned to emphasize thought processes instead of system languages. After all, today's searchers will become the trainers, as long as commercially available training remains unsatisfactory.

SEARCH EXERCISE: INTERPRET THE BOOLEAN LOGIC USED IN THE FOLLOWING VENN DIAGRAMS



SEARCH EXERCISE: FREE TEXT AND CONTROLLED VOCABULARY ON BRS

Which of the following search statements would retrieve this sample citation?

CITATION FROM ERIC DATABASE:

AN EJ126493
AU PEPINO, LYLE F.
TI OCCUPATIONAL TECHNOLOGY: AN EXPERIMENT IN CURRICULAR FLEXIBILITY
SO ENGINEERING EDUCATION. 65. 8. 831-832.
MJ ASSOCIATE-DEGREES. CURRICULUM. POST-SECONDARY-EDUCATION. TECHNICAL-EDUCATION
MN ADULT-EDUCATION. HIGHER-EDUCATION. PROGRAM-DESCRIPTIONS. TECHNICAL-INSTITUTES.
ID OCCUPATIONAL TECHNOLOGY
AB DESCRIBES AN OCCUPATIONAL TECHNOLOGY CURRICULUM, DESIGNED TO MEET THE WIDELY DIVERGENT NEEDS OF INDIVIDUALS ALREADY EMPLOYED IN INDUSTRY OR BUSINESS WHO DESIRE TO UPGRADE A PRESENT SKILL OR ACQUIRE A NEW ONE. THE CURRICULUM IS STRUCTURED SO THAT HALF OF THE CREDITS REQUIRED FOR THE ASSOCIATE DEGREE ARE FREE ELECTIVES AND HALF ARE REQUIRED CORE COURSES. (MLH).

1. Curricular
2. Curriculum
3. Curricular.MJ.
4. Occupational-Technology
5. Occupational-Technology.MJ.
6. Occupational ADJ Technolog\$
7. (Occupational ADJ Technology)..AB.
8. (Occupational ADJ Technology).TI,AB.
9. (Occupational ADJ Technology).TI,ID,MJ.
10. Associate ADJ Degrees
11. Associate-Degrees
12. Associate-Degrees AND (Core ADJ Courses)
13. Associate-Degrees AND Core-Courses
14. (Engineering ADJ Education).SO.
15. ((Curricular ADJ Flexibility) OR Associate-Degrees OR Technical-Institutes OR (Free ADJ Electives)).MJ,MN.
16. 15..AB.
17. (Technical WITH Institut\$).MJ,MN.
18. MLH.AB.